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Preface

BY A. J. C. WILSON

A new volume of the *International Tables for Crystallography* containing mathematical, physical and chemical tables was discussed by the Executive Committee of the International Union of Crystallography at least as early as August 1979. My own ideas about what has become Volume C began to develop in the course of the Executive Committee meeting held at the Ottawa Congress in August 1981. It was then conceived as an editorial condensation of the old volumes II, III and IV, with obsolete material deleted and tables easily reproduced on a pocket calculator reduced to a skeleton form or omitted altogether. However, it soon became obvious that advances since the old volumes were produced could not be satisfactorily accommodated within such a condensation, and that if Volume C were to be a worthy companion of Volume A (*Space-Group Symmetry*) and Volume B (*Reciprocal Space*) it would have to consist largely of new material.

Work on Volumes B and C began officially on 1 January 1983, and the general outlines of the volumes were circulated to the Executive Committee, the National Committees, and others interested. This circulation generated much constructive criticism and offers of help, particularly from several Commissions of the Union. The Chairmen of certain Commissions were particularly helpful in finding qualified contributors of specialist sections, and from time to time served as members of the Commission on *International Tables for Crystallography*. I often had occasion to lament the lack of a Commission on X-ray Diffraction. The revised outlines of the two volumes were approved by the Executive Committee during the Hamburg Congress in 1984.

For various reasons the publication of Volume C has taken longer than expected. A requirement that prospective contributors should be approved by the Executive Committee produced some delays, and more serious delays were caused by authors who failed to deliver their contributions by the agreed date – or at all. A decision was taken to include in this first edition only what was in the Editor's hands in January 1990, and since that date the timetable has been set by the printers. The present Volume is the result. Readers will find a few sections resulting from the original idea of editorial condensation from Volumes II, III and IV, and some sections from those volumes revised or rewritten by their original authors. Most of Volume C is entirely new.

I am indebted to many crystallographers for advice and encouragement, to the authors of contributions that arrived before the deadline, to the Chairmen of various Commissions for their help, and to the Technical Editor for his skill and good humour in dealing with much difficult material.

Preface to the third edition

BY E. PRINCE

This is the third edition of *International Tables for Crystallography* Volume C. The purpose of this volume is to provide the mathematical, physical and chemical information needed for experimental studies in structural crystallography. It covers all aspects of experimental techniques, using all three principal radiation types, from the selection and mounting of crystals and production of radiation, through data collection and analysis, to the interpretation of results. As such, it is an essential source of information for all workers using crystallographic techniques in physics, chemistry, metallurgy, earth sciences and molecular biology.

Volume C of *International Tables for Crystallography* is one of the many legacies to crystallographers of the late Professor A. J. C. Wilson, whose death on 1 July 1995 left the preparation of a revised and expanded second edition unfinished. When I was appointed as Professor Wilson's successor as Editor, I realised that although most of the material in the first edition was new, some had been carried over from Volumes II, III, and IV of the earlier series *International Tables for X-ray Crystallography* and had become outdated. Moreover, many of the topics covered were changing very rapidly, so needed to be brought up to date. In fact, by the time the second edition was published in 1999, more than half the chapters had been revised or updated and two completely new chapters, on reflectometry and neutron topography, had been included. The second edition of Volume C was also the first volume of *International Tables* to be produced entirely electronically.

The authors of the second edition were asked if they wished to submit revisions to their articles for this third edition in August 2001. All revisions were received within the following year. In total, 11 chapters have been revised, corrected or updated, and all known errors in the second edition have been corrected. I hope few new errors have been introduced. I thank all authors, especially those who have submitted revisions, and I particularly thank the Editorial staff in Chester for their continued dilligence.